Amendments to the Claims

1. (currently amended) ~~Method~~ A method for the manufacture of a high temperature superconducting layer on a substrate ~~(1a, 1b)~~ comprising the following steps:

   a. deposition of an $RBa_2Cu_3O_7$-layer ~~(2)~~ onto the substrate ~~(1a, 1b)~~ with a low growth rate less than 1 nm/s, wherein R represents yttrium, an element of the group of rare-earth elements (atomic number 57-71) or mixtures of two or more of these elements;

   b. deposition of an $XBa_2Cu_3O_7$-layer ~~(3)~~ onto the $RBa_2Cu_3O_7$-layer ~~(2)~~ with a high growth rate greater than 1 nm/s, wherein X represents yttrium, an element of the group of rare-earth elements (atomic number 57-71) or mixtures of two or more of these elements.

2. (currently amended) ~~Method~~ A method according to claim 1, ~~wherein the low growth rate is < 1nm/s and~~ wherein the high growth rate is ~~> 1nm/s, preferably >~~ greater than 2 nm/s.

3. (currently amended) ~~Method~~ A method according to claim 1 ~~or 2~~, wherein the $RBa_2Cu_3O_7$-layer ~~(2)~~ comprises a thickness of ~~[<]~~ less than 500 nm ~~, preferably < 100 nm~~.

4. (currently amended) ~~Method~~ A method according to claim 1, wherein the $RBa_2Cu_3O_7$-layer ~~(2)~~ has a thickness of ~~[>]~~ greater than 5 nm.

5. (currently amended) ~~Method~~ A method according to claim 1, wherein the $XBa_2Cu_3O_7$-layer ~~(3)~~ has a thickness of ~~[>]~~ greater than 1µm.

6. (currently amended) ~~Method~~ A method according to claim 1, wherein the $RBa_2Cu_3O_7$-layer ~~(2)~~ is deposited onto an at least biaxially textured substrate ~~(1a)~~ or a substrate with an at least biaxially textured buffer layer ~~(1b)~~.

7. (currently amended) ~~Method~~ A method according to claim 1, wherein the $XBa_2Cu_3O_7$-layer ~~(3)~~ is deposited as a precursor layer, comprising the metal components of the high temperature superconducting layer.

8. (currently amended) ~~Method~~ A method according to claim 7, wherein the precursor layer is transformed in a further method step by a temperature treatment with a high transformation rate into a superconducting $XBa_2Cu_3O_7$-layer ~~(3)~~.

9. (currently amended) ~~Method~~ A method according to claim 8, wherein the transformation rate is [~~>~~] greater than 2 nm/s.

10. (currently amended) ~~Method~~ A method according to claim 1, wherein R represents a rare-earth element of the group comprising ~~with a great ion radius (~~ La, Pr, Nd, Sm, Eu, and Gd, [~~)~~] or compounds comprising to at least 50% of one or more of these elements in mixtures with other rare-earth elements.

11. (cancelled)